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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

ZEMEL, IRINA SOPHIA

ART UNIT	PAPER NUMBER
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1711

DATE MAILED: 11/12/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/814,339

Applicant(s)

ABUSLEME ET AL.

Examiner

Irina S. Zemel

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/12/04; 7/13/04.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Objections

Claims are objected to because of the following informalities: Claim 6 recites the following limitation: "selected between the tetrafluoroethylene homopolymer (PTFE or its copolymers)". While the claims is not per se indefinite, the claim language "between" is not appropriate for recitation components of Markush a group. Appropriate correction is required.

Claim 5 recites "under fine powder" as one of the characteristics of the claimed nucleating agent. It appears that applicants meant to recite "in the form of a fine powder." Appropriate correction is required.

Applicants should note that while each of the claims 1-3, 5, 7, 10 and 12 contain a broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim), the claims are not indefinite per-se. However in each case, the narrower ranges are not considered claim limiting, i.e., for the purposes of art rejection, the claim limitation is met if the prior art discloses a corresponding element that falls within the broader range only. It is suggested that applicants re-write claims containing broader/narrower limitations to exclude the narrower ranges and, if desirable, add additional dependent claims directed to the narrower ranges.

It is further suggested that the process claims 12 should be re-written in a more conventional process claim format positively reciting each step of the claimed process, such as "charging chlorotrifluoroethylene in the reactor; followed by...", i.e., reciting a

sequence of steps (in a particular order, if desirable) to avoid any confusion in claimed steps.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recited a "second melting point". It is not clear whether recited second melting point is a melting point of the claimed ethylene/chlorotrifluoroethylene copolymer (ECTFE) or a melting point of any additional or optional components of the compositions, such as CFTE homopolymer.

Claims 5-7 and 9-11 recites the limitation "Foamable" composition or "Foamed" article in the preamble of each claim 5-7, 9 and 11. There is insufficient antecedent basis for this limitation in the claim because the base claims 1 does not recite a "foamable" composition, rather it recites a "thermoprocessable polymeric composition".

Claim 7 recites the limitation "'the nucleating component B'" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim. Claim 7, as amended, depends on claim 1 and claim 1 does not recite any nucleating agents.

Claim 3 is indefinite since it is not apparent under what conditions the M.I. is measured. Conditions for measuring M.I. (temperature and load) may vary depending

on a polymer, and the conditions are standardized for only a few classes of polymers of known compositions. Since the claimed polymer do not belong, on its face, to a readily apparent class of polymers for which the M.I. determination conditions would be clearly known to an ordinary artisan, applicants should clearly specify such conditions.

Claim 11 recites limitation "obtainable" in the second line of the claim. The claim is indefinite if undue experimentation is involved to determine boundaries of protection. This rationale is applicable to polymer "obtainable" by a stated process because any variation in any parameter within the scope of the claimed process would change the polymer produced. One who made or used a polymer made by a process other than the process cited in the claim would have to produce a polymer using all possible parameters within the scope of the claim, and then extensively analyze each product to determine if this polymer was obtainable by a process within the scope of the claimed process. See *Ex parte Tanksley*, 26 USPQ 2d 1389.

Claim 11 is further indefinite since it recites and article obtainable according to claim 4. However, claim 4 is not a process, but rather a product claim. Thus, it is not understood how an article can be obtained according to a process claim that does not recite any steps for obtaining an article.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by US Patent 6,107,393 to Abusleme et al', (hereinafter "Abusleme") or US PreGrant Publication 2001/0003124 to Zolotnitsky et al., (hereinafter "Zolotnitsky").

Both references disclose compositions comprising an ethylene/chlorotrifluoroethylene copolymer (ECTFE). See Abusleme, abstract, description of the copolymer, and Zolotnitsky, [0023] – description of component I. The copolymers disclosed in both references may contain as low as 10 mole % of ethylene. Thus, even if the composition does not contain any significant amount of other components, the claimed amounts of ethylene in either the copolymer or the compositions are met by the disclosed copolymers having as low as 10 mole % of ethylene. The references do not explicitly disclose the second melting point of the copolymer (compositions). However, it is reasonably believed that disclosed copolymers that have a predominant amount of chlorotrifluoroethylene (CTFE) monomer in its structure inherently exhibit the claimed melting temperature. This belief is further supported by the reported melting point for one exemplified copolymer in Zolotnitsky - Example 1, T_{mII} of 190 C; and several illustrative examples disclosed in Abusleme – see table 1. Note that all of the illustrative examples have higher content of ethylene than the disclosed lower limit of 10%. Copolymers that have lower amounts of ethylene are expected to exhibit even higher T_{mII}.

The burden is shifted to the applicants to provide evidence to the contrary.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 2 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over.

The disclosure of the Zolotnitsky and Abusleme references is discussed above.

Both references, as discussed above, expressly disclose copolymers with ethylene content as low as 10 %. The references further explicitly teach addition a third comonomer in the amount of up to 0 % based on the weight of ethylene and CTFE, and additional components of the composition such as plastisizers and various additives in the amounts of up to 30 weight %. Based on this disclosure, compositions containing ethylene in the claimed amounts (such as 6% overall) when the copolymer itself containing only 10 mole % of ethylene are within the purview of the reference and would have been obvious from the disclosure of the references as one of the lower acceptable amounts absent showing unexpected results that can be clearly attribute to the amounts of ethylene in the overall composition.

The references do not address the melt flow index (MI) of the copolymers suitable for their inventions or obtainable by the disclosed procedures, thus implying that copolymers of any MI would have been acceptable or can be obtained absent showing of unexpected results that can be attributed to specifically claimed MI. Some of the illustrative examples report MI of the copolymers, all of which are above the claimed minimum MI. See example 1 in Zolotnitsky and table I of Abusleme. Moreover,

MI is a characteristic of a polymer molecular weight and it is well known in the art that some of the physical properties of a given polymer directly depend on its molecular weight. Therefore, it would have been obvious for an ordinary artisan to utilize copolymers of a given MI when a specified physical properties consistent with a molecular weight corresponding to a given MI is desirable.

Therefore, the invention as claimed in claims 2 and 3 would have been obvious from the disclosure of either one of the above cited references.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Zolotnitsky or Aabusleme in combination with Encyclopedia of Polymer Science and Engineering. Additives, (Hereinafter "Encyclopedia").

The disclosure of the Zolotnitsky and Aabusleme references is discussed above. The references do not explicitly list nucleating agents among suitable additives. However, it is well known in the polymer art to add various nucleating agents to semi-crystalline polymers in order to influence crystallization kinetics and, subsequently, the ultimate properties of the resulting polymers. See Encyclopedia, section 2.6. Therefore, adding a nucleating agent to the compositions disclosed in the Zolotnitsky or Aabusleme would have been obvious to modify the physical properties of the polymers disclosed by Zolotnitsky or Aabusleme as per disclosure of Encyclopedia.

Thus, the inventions as claimed in claim 4 would have been obvious from the combined teachings of the above cited references.

Claims 5-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Zolotnitsky or Aabusleme in combinations with Encyclopedia and US Patent 4,304,713

to Perelman (hereinafter "Perelman") or US Patent 5,688,457 to Buckmaster et al., (hereinafter "Buckmaster").

The disclosure of Zolotnitsky or Aabusleme are discussed above. Further, as discussed above, addition of nucleating agents is known as per disclosure of Encyclopedia. Also, as per disclosure of encyclopedia, addition of blowing agents is also known in the polymer art to improve various properties and appearances. Low molecular polytetrafluoroethylene (PTFE) (in powdered form with particle size of less than 30 UM) is a well known nucleating AND blowing agent for fluorinated or other halogenated olefinic polymers as per, for example, disclosure of Perelman or Buckmaster. Therefore, it would have been obvious to add low molecular weight PTFE (that inherently satisfies that claimed melting temperature) to compositions disclosed by Zolotnitsky or Aabusleme and containing fluorinated copolymer in order to improve its properties and appearance, absent showing of unexpected results. Claims 5-11 contain a preamble limitation of intended use of the composition as foamed composition. This limitation is given weight only to the extent that the composition disclosed in the reference is capable of being used such. The composition disclosed by Zolotnitsky or Aabusleme as modified by addition of low molecular weight PTFE are inherently capable for the claimed use because, as discussed above, PTFE is a known foaming agent for fluorinated olefinic polymers. Therefore, the preamble limitation is inherently met by the modified compositions as proposed above. The burden is shifted to the applicant to provide convincing factual evidence to the contrary. Claim 11 is further contains (as interpreted for the purposes of the art rejection) a limitation of

foamed articles and coatings for electrical cables. Again the limitation "of electrical cables" is interpreted as an intended use limitations. Since Zolotnitsky expressly discloses suitability of the compositions for cable jacketing application (see [0001]), it is reasonable believed that the foamed composition as per proposed modification is also inherently capable of being used as such.

Therefore, the invention as claimed in claims 5-11 would have been obvious from the combined teachings of the above cited references as per discussions above.

Allowable Subject Matter

Claim 12 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

The invention claimed in claim 12 is directed to a method of polymerizing ethylene/chlorotrifluoroethylene copolymer (ECTFE) containing up to 20 mole % of ethylene by emulsion copolymerization of ethylene with chlorotrifluoroethylene (CTFE) comprising the steps of:

- first charging all the CTFE is in a reactor, followed by
- feeding the ethylene during partial CTFE conversion;
- discontinuing the ethylene feeding; and
- continuing the polymerization of CTFE until substantially all of the initially charged CTFE is reacted.

None of the prior art of record suggests the claimed process steps for obtaining low ethylene content ECTFE copolymer compositions.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ragazzili et al, "Copolymerization of Ethylene and Chlorotrifluoroethylene by Trialkylboron Catalyst", European Polymer Journal discloses polymerization of ethylene:chlorotrifluoroethylene ECTFE copolymers.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Irina S. Zemel whose telephone number is (571)272-0577. The examiner can normally be reached on Monday-Friday 9-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571)272-1078. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ISZ

A handwritten signature in black ink, appearing to read "Irina Zemel". The signature is fluid and cursive, with the first name "Irina" and last name "Zemel" clearly distinguishable.

Irina S. Zemel
Examiner
AU 1711